

Appln. No.: 10/808,982  
Page 3

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims

1. (Currently Amended) An artificial limb for an amputee who has a residual limb comprising:

a means for receiving a portion of a residual limb of an amputee;

a means for applying vacuum to the means for receiving the residual limb portion;

a means for supporting the weight of the amputee when the residual limb portion is received within the receiving means;

a means for totally contacting the residual limb portion so as to provide equal weight distribution over the residual limb portion, and absorb and dissipate mechanical and shear forces and shock, when the residual limb portion is received within the receiving means;

a means for evenly distributing the vacuum between the means for receiving and the residual limb portion by evenly applying vacuum over the means for totally contacting the residual limb portion within the means for receiving;

a means for reducing loss of vacuum against the residual limb portion during a weight-bearing phase of walking by the amputee; and

a means for reducing loss of vacuum against the residual limb portion during a non-weight bearing phase of walking by the amputee.

2. (Original) The artificial limb of claim 1, wherein the supporting means comprises a prosthetic foot.

3. (Original) The artificial limb of claim 1, wherein the means for applying vacuum comprises a vacuum pump.

Appln. No.: 10/808,982  
Page 4

4. (Original) The artificial limb of claim 1, wherein the means for applying vacuum comprises a vacuum reservoir.
5. (Original) The artificial limb of claim 1, wherein the receiving means comprises a socket.
6. (Currently Amended) The artificial limb of claim 1, wherein the means for reducing loss of vacuum against the residual limb during a weight-bearing phase or during a non-weight bearing phase comprises a seal.
7. (Currently Amended) The artificial limb of claim 1, wherein the means for reducing loss of vacuum against the residual limb during a weight-bearing phase or during a non-weight bearing phase comprises a suspension sleeve.
8. (Currently Amended) The artificial limb of claim 1, wherein the means for reducing loss of vacuum against the residual limb during a weight-bearing phase and/or during a non-weight bearing phase comprises a means for maintaining vacuum during both the weight-bearing and non-weight bearing phases of walking by the amputee.
9. (Currently Amended) The artificial limb of claim [[8]], wherein the means for maintaining vacuum totally contacting the residual limb portion comprises a vacuum pump adapted to regulate a level of vacuum against flexible polyurethane liner that tucks up to the skin of the residual limb portion and wherein the means for evenly applying the vacuum comprises a thin, fabric sheath.
10. (Currently Amended) An artificial limb for an amputee who has a residual limb comprising:
  - a flexible liner adapted to encase a portion of a residual limb so as to provide total contact with skin on the residual limb portion and to absorb and dissipate shock, mechanical forces and shear forces applied to the residual limb portion during ambulation wearing the artificial limb;
  - a thin sheath adapted to encase the residual limb portion encased in the flexible liner;

Appn. No.: 10/808,982  
Page 5

a single, substantially rigid socket configured to receive the residual limb portion encased in the liner and sheath and to form a cavity between the sheath and/or the liner and the socket;

a support member coupled to the socket, the support member adapted to provide support for the weight of the amputee when the residual limb portion is received within the socket;

a seal member adapted to seal the cavity between the sheath and/or the liner and the socket; and

a vacuum source fluidly coupled to the cavity between the sheath and/or the liner and the socket, the vacuum source configured to apply a designated vacuum pressure within the socket which is applied evenly over the liner encasing the residual limb portion as a result of the sheath, so as to securely couple the artificial limb to the residual limb portion and to maintain the designated vacuum pressure within desired limits during use of the artificial limb by the amputee.

11. (Original) The artificial limb of claim 10, wherein the support member comprises a prosthetic foot.

12. (Original) The artificial limb of claim 10, wherein the vacuum source comprises a vacuum pump.

13. (Original) The artificial limb of claim 12, wherein the vacuum pump comprises shock absorption.

14. (Original) The artificial limb of claim 12, wherein the vacuum pump is weight actuated.

15. (Currently Amended) The artificial limb of claim 10, wherein the vacuum source sheath comprises a vacuum reservoir a thin knitted fabric.

16. (Original) The artificial limb of claim 10, wherein the seal member comprises a suspension sleeve.

Appn. No.: 10/808,982  
Page 6

17. (Original) The artificial limb of claim 10, wherein the seal member is formed integral with the flexible liner.

18. (Currently Amended) A method for managing volume loss in a residual limb of an amputee when wearing an artificial limb, the method comprising the steps of:

encasing a portion of a residual limb in a flexible liner;

encasing the liner encased residual limb portion in a thin sheath;

inserting the encased residual limb portion into a single, substantially rigid socket of an artificial limb and thereby forming a cavity between the sheath and/or liner and the socket, the socket adapted to be coupled to a structure capable of supporting and facilitating walking by the amputee;

sealing the cavity;

supplying vacuum to the cavity and over the sheath so as to apply vacuum pressure evenly over the liner encasing the residual limb; and

maintaining vacuum within the cavity during both a weight-bearing phase of walking by the amputee and a non-weight bearing phase of walking by the amputee.

19. (Original) The method of claim 18, wherein the step of maintaining vacuum comprises reducing the loss of vacuum within the cavity.

20. (Original) The method of claim 18, wherein the step of sealing the cavity comprises placing a suspension sleeve over a portion of the residual limb and over a portion of the socket.